BARC Score

Enterprise BI & Analytics Platforms

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Abstract

This is the seventh edition of the BARC Score business intelligence and analytics vendor evaluation and ranking. This research compares enterprise BI & analytics platforms that are able to fulfill a broad set of BI & analytics requirements within the enterprise. The aim is to evaluate software that is not confined to a specific usage scenario or user type but is able to allow a large number of different users to gain insights from data by using different formats and technologies.

Based on countless data points from various BARC surveys and many analyst interactions, vendors are rated on a variety of criteria, from portfolio capabilities and architecture to sales and marketing strategy, financial performance and customer feedback.
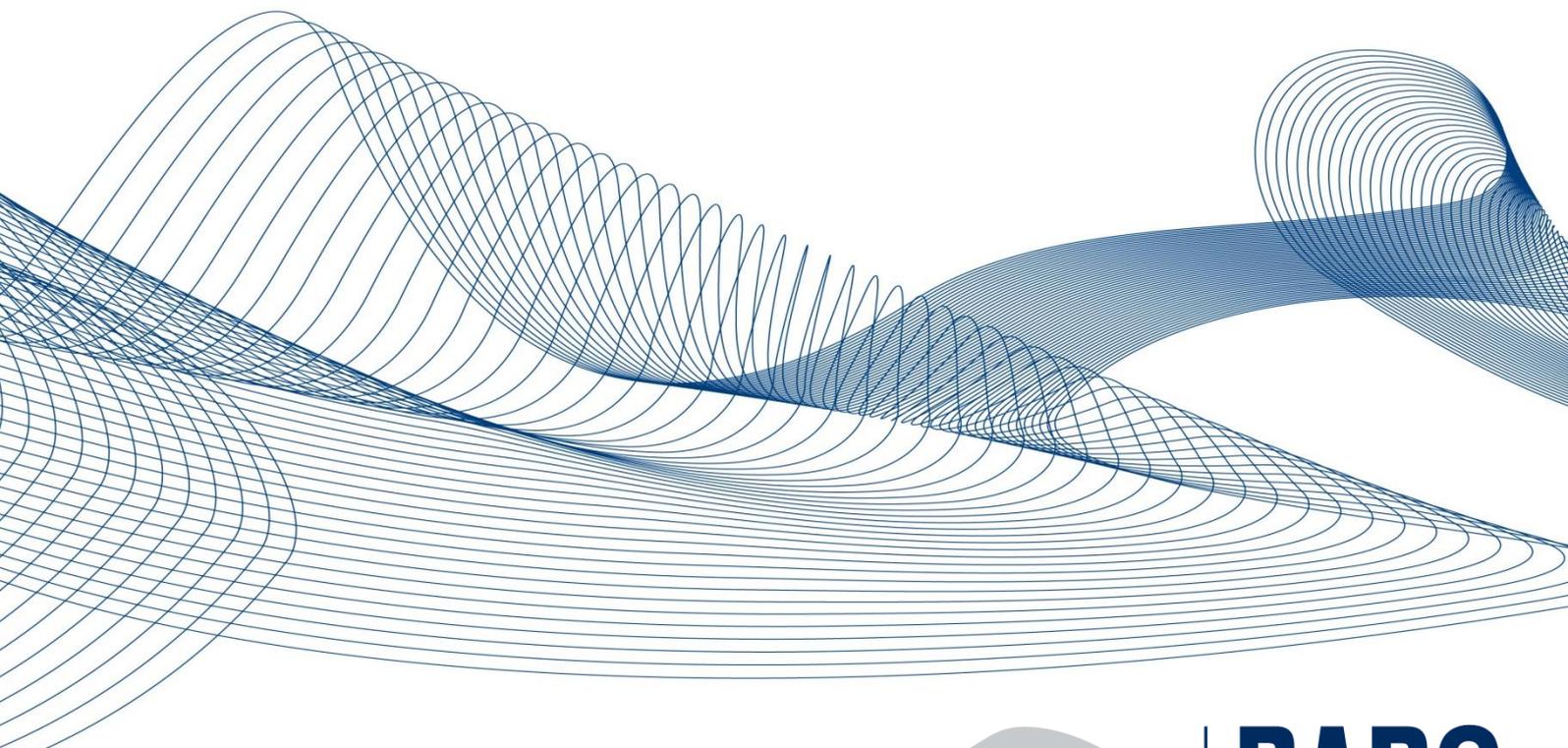
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Overview

The market for business intelligence (BI) and analytics platforms is still evolving rapidly. On the one hand, there is a massive push towards business user empowerment by all relevant market players. Even established BI suite vendors with standardization and governance as the sweet spots of their IT-oriented suites have invested heavily in modernization and business user orientation in recent years. On the other hand, BI & analytics specialists focused on business users have entered the market targeting buyers from line of business who were frustrated by IT-controlled and central BI environments.

This report analyzes the strengths and challenges of the leading vendors that offer significant value to customers wanting to implement a 'modern' enterprise BI & analytics platform.

A modern enterprise BI & analytics platform is able to span traditional and explorative BI & analytics requirements both for standalone data and information applications but also when embedded in operational applications. With the increasing importance of data to not only support management decisions but also increase the efficiency and effectiveness of operational processes - as well as the growing number of products, services and business models being based on data - a modern enterprise BI & analytics platform is the indispensable backbone of any enterprise wanting to succeed in adapting to the digitalization of markets.

Our surveys show that most platforms fall short when it comes to reaching out to end users and consumers of information. Therefore, modern software should offer solutions and technology to serve these workers with insights without distracting from their daily work or overburdening them with overly complex technology. As those users typically serve critical operational processes, they not only need sound actual information but also the prediction of possible anomalies, failures or downtime to prevent serious impacts on the success of their companies.

The increasing complexity of data analysis, growing data volumes and diversity of data have made data management and governance indispensable in the modern analytics landscape. As a consequence, all vendors – including former "self-service BI" players – have started to provide more data management and governance features while enabling business users as primary content creators and consumers. As today's modern enterprise BI & analytics platform must support a broad range of use cases, a solid and modern infrastructure as well as modules for different types of users are required.

The technical infrastructure includes the capacity to set up a central, governed and open semantic layer for all analytics modules and third-party tools, integrate the required data and offer additional functionality such as data lineage, impact analysis and data catalogs. A modern BI & analytics platform should also be able to interact with other systems so customers can gain as many insights as possible from their data. Proprietary and closed systems were downgraded in this research.

Besides buying a modern enterprise BI & analytics platform, organizations should have a BI & analytics strategy that goes well beyond an architecture blueprint to include non-technical and emerging business-user-oriented requirements, alignment with corporate strategy, organizational models, outcome-based priority settings and a proper roadmap.

When it comes to kicking off or expanding a business intelligence and analytics program, the initial focus almost always lies on the required toolsets. While this may not be the ideal starting point, a platform or product decision has to be made at some stage. This document will help with the selection process by evaluating the most commonly used product sets from all the leading vendors.

Inclusion criteria

There are two separate inclusion criteria categories for this BARC Score: the first is associated with a vendor's products and the other is linked to the financial results relating to those products. To be evaluated in this BARC Score, a vendor has to have a strong focus on providing BI & analytics functionality and supply four out of five technologies from the following functional portfolio:

- Formatted reporting

- Dashboards

- Analysis and data discovery

- Advanced analytics

- Self-service BI and ad hoc reporting

In addition, the vendor has to generate a minimum of 15 million Euros in license revenue per year with the above product set, spread across at least two separate geographical regions. Furthermore, the product set must have a significant number of implementations and license revenues across different geographical regions to be considered as global.

We consider the following as individual geographical regions:

- Europe, Middle East and Africa

- North America

- Latin America

- Asia/Pacific

Evaluation criteria

Every vendor is evaluated on two dimensions, 'Portfolio capabilities' and 'Market execution', each of which represents an axis on the BARC Score chart and considers the sub-criteria described below.

Portfolio capabilities

In this BARC Score, vendors' portfolio capabilities were scored in several areas:

- Standardized content

- Data

- Infrastructure

- Analyses

- Portfolio

- General

- Advanced analytics

The weightings for each of the categories and sub-categories are shown in Table 1. Each of the sub-categories also have detailed weightings and criteria.

Please note: Only vendor-distinct functionality is included in our vendor portfolio ratings. We do not consider OEM products or partner solutions.

Table 1: Portfolio capabilities - criteria and weighting

Category	Criteria	Criteria weighting	Category weighting
Standardized content	Dashboards and BI applications Reporting – print-oriented, formatted Content distribution Embedded BI & analytics Data stories Mobile BI & analytics	High High Low Low Low Low	High
Data	Relational semantic model Dimensional semantic model Data storage Data preparation Connectivity Metadata	High Medium Medium Low Low Low	High
Infrastructure	Performance System architecture Deployment Openness	High Medium Medium Low	Medium
Analyses	Analyses (navigation in data, calculations) Visual exploration (visual navigation in data) Automated insights	High Medium Low	Medium
Portfolio	Portfolio integration Portfolio maturity Portfolio development	High Medium Medium	Low
General	Ease of use Guidance Conversational UI	Medium Low Low	Low
Advanced analytics	Building, operationalizing and monitoring models, predefined advanced analytical models, integration with languages such as R or Python	Low	Low

Standardized content

A modern BI & analytics platform must also be able to serve users with personalized information. A 2019 BARC study showed that customers ask for diverse content distribution formats served over a vast number of different channels (source: The Future of Reporting, BARC, 2019). Therefore, we assessed capabilities and support for the creation of different content formats and the information delivery capabilities of each platform.

- **Dashboards** (BI applications): These provide graphical views of key performance indicators combined with the ability to intuitively drill down to details for consumption on all devices. Modern BI & analytics platforms allow companies to build sophisticated guided apps.

- **Formatted reports:** These are mostly page-oriented reports with a fixed format. They are run on regular schedules and triggered by alerts or user requests. Includes static as well as dynamic reports with filters and a predefined, reader-oriented layout. Precise control over layout components (e.g., pixel-perfect placement) and numerous printing options (page breaks, hiding components for printing and so on) as well as responsive design for all display types are vital.

- **Content distribution:** Content created in all application types must be readily available to feed all communication channels. Distribution must include bursting static and page-oriented PDFs as well as exports to various formats such as Excel files. Triggering, scheduling and bursting are required to reach a broad number of users.

- **Embedded BI & analytics:** Embedding intelligence in operational applications is growing steadily in popularity. From dashboards to prediction and optimization models, users get insights directly in their specific operational processes and can act on the findings – closing the classic management loop from information to action at an operational level.

- **Mobile BI & analytics:** In our experience, simply copying an existing dashboard to a mobile environment does not fulfill the requirements of all different types of users. More and more vendors offer additional presentation formats for data such as stories or representations of the most important key performance indicators (KPIs) without the need to build a specific dashboard or provide users with data alerts sent to mobile devices.

Data

Modern BI & analytics platforms require sophisticated and integrated data handling capabilities ranging from connectivity to preparing data for use in analytics to storage and modeling.

- **Relational semantic model:** A central and trusted description of master data and measures is key to governed data sources. It allows users to retrieve data from all sources quickly for analysis and report creation. The creation and support of relational semantic models is assessed in this category. As most data sources are relational, we attach high importance to this criterion.

- **Dimensional semantic model:** A central and trusted description of master data and measures is key to governed data sources. It allows users to retrieve data from all sources quickly for analysis and report creation. Dimensional semantic models are mostly seen in the financial domain. As enterprises typically have both relational and dimensional types of models, a modern BI & analytics platform should be able to query both.

- **Data storage:** An integrated and performance-optimized data store helps to improve performance if needed. However, direct access to multiple data sources should also be available to increase the scope of possible use cases and leverage existing data governance measures.

- **Data preparation:** Shaping, enriching and publishing data for all analytical purposes must be supported. Combining data of various types from different sources is as important as combining cached and live data. Good data profiling speeds up data preparation significantly and helps to enhance data quality.

- **Connectivity:** Tools must easily connect to all types of data source such as a data warehouse, a cloud data lake, business applications and unstructured data. Predefined connectors help to leverage data from isolated applications. Good performance, traceability and monitoring help users to ingest data from everywhere.

- **Metadata:** A modern BI & analytics platform supports administrators with information on data and help in accessing it. Therefore, functions such as data lineage, impact analysis (within the

tool or beyond), process monitoring (e.g., data loads, batch exports) and certification of BI content ease the development and maintenance of a platform.

Infrastructure

A modern enterprise BI & analytics platform must serve multiple usage scenarios and expanding user numbers as well as growing data sources and volumes. In terms of infrastructure, we evaluate a broad range of technical criteria including architecture and openness as well as other technical features such as performance optimization techniques and security settings.

- **Performance:** The time it takes to retrieve data and content after a user interaction (e.g., querying). Despite growing data volumes, users increasingly expect instant results from all operations. Even in mature markets, the differences between the tools available are huge. Performance plays an important role in user satisfaction, acceptance and perceived usability.

- **System architecture:** The architecture should allow for efficient scaling if the data volume or the number of users increases without compromising performance or requiring huge hardware investments. Moreover, modern software is based on micro services which allow precise development and maintenance.

- **Deployment:** Various options should be available to support deployment in the cloud and on-premises as well as the increasingly popular hybrid scenarios. Support for containers is also assessed.

- **Openness:** To evaluate the openness of a solution, we analyze the vendor's API offering and support for third-party products to interact with the system. If proprietary data stores are in use, we examine which access methods are offered to read the data.

Analyses

- **Analyses:** Analyses allow business users to intuitively dig deep into the available data. OLAP provides dimensions and measures to structure data in a multidimensional format geared at business users. While not discussed much these days, dimensional analyses are still highly valuable. Ad hoc analyses often leverage relational semantic models to quickly produce simple reports.

- **Visual exploration:** Visual exploration allows users to quickly scan significant amounts of data for patterns or to understand the meaning of a dataset. Interactive graphical representations facilitate the gleaning of insights by making use of the human ability to detect patterns. Visual analyses require tight integration with data preparation and can deliver insights beyond those of dimensional analyses.

- **Automated insights:** Automated insights speed up time to insight by making use of machine learning to highlight the most important insights in data, guiding users through possible analysis steps and giving answers beyond the questions asked. Patterns and outliers are detected in the background and are presented to users in a meaningful way – often supported by NLG.

Portfolio

We evaluate each vendor's overall portfolio from a customer perspective. Therefore, we analyze the integration between different system components and the consistency of user interfaces across different modules. The product's lifecycle and maturity are also assessed. Customers often complain about reliability and stability in early product releases. Early versions are rarely as functionally rich as mature products, so they do not usually meet all their customers' functional requirements. Sometimes vendors offer mature products that are no longer being enhanced with innovative, new features. As a consequence, they may fail to fulfill new and emerging requirements.

- **Integration:** A state-of-the-art business intelligence and analytics platform must have consistent user interfaces for publishing, consuming and interacting with data and reports. Consistency should not only apply to user interfaces but also to objects used to present and interact with data (e.g., tables and graphs) at report level and to data (e.g., common semantic layer, joint data access standards, reusable objects).

- **Maturity**: Maturity describes how long a tool has been on the market or if significant changes to the front end or underlying architecture have been introduced lately. Mature products are typically very stable and offer a comprehensive set of functions under the hood that are important in daily use.

- **Development**: We examine the development path of the tool and whether it is still strategic in a vendor's portfolio for the market segment in question. The roadmap for development must show a clear vision and feasible path and significant new features must have been implemented in the course of a continued development effort by the vendor.

General

We assessed some overarching criteria related to the end-user experience, such as ease of use, guidance capabilities and the availability of a conversational UI to help content consumers to gain insights.

- **Ease of use**: Unified interfaces with a clear and modern design are required to attract business users. Good integration between all components and reliable performance are vital for productivity in content creation – from reports to dashboards and beyond. In business-user-oriented modules, coding must be optional and ideally analysis should be possible directly in the data view without too many pop-ups or similar wizards that distract users from their analysis.

- **Guidance**: This describes a distinct approach to increase usability by active support throughout the process of content creation. Suggestions for suitable visualizations based on selected data help users to make sense of data. ML is increasingly used in data preparation and modeling for suggesting data transformation steps or highlighting data quality issues.

- **Conversational UI**: This allows users to interrogate data sets by keying in questions in natural language (NLQ) or even by leveraging speech recognition. NLQ can also be used to quickly build basic reports or dashboards. While not suitable for all uses, NLQ makes analytics and BI accessible to even more users, which is important in democratizing data access.

Advanced analytics

Advanced analytics represents non-directed, hypothesis-free data analysis. Various algorithms scan the database searching for patterns used for a segmentation, classification or association of data. Methods cover machine learning, statistical data analysis, neural networks, decision trees, time series and many other algorithms. Users must be well trained in order to use these methods and to gain the expected insights. Advanced analytics tools often have data integration and analysis process support functionality.

Besides data scientists and statisticians, power users from business departments are also demanding more statistical algorithms for data analysis. In contrast to data scientists, these users do not typically design/code the algorithms but use predefined algorithms instead. Therefore, many modern enterprise BI & analytics platforms vendors provide not only an offering for data scientists but also incorporate advanced analytics functions into their analysis solutions. A few vendors have now begun to work on concepts to improve collaboration between data scientists and business analysts.

Criteria weighting

We do not consider all categories and sub-categories to be equally important in this BARC Score. Our weightings are based on BARC's own view of current user focus and buying patterns.

Market execution

On the market execution axis, we rate the business intelligence vendors in this BARC Score using the following criteria and their corresponding weighting (see Table 2).

Table 2: Market execution - criteria and weighting

Criteria	Weighting
BI platform offering	High
Market distribution of product	High
Product strategy	High
Customer satisfaction	High
Financials	Medium
Geographical coverage	Medium
Ecosystem	Medium
Sales strategy	Medium
Organizational strength	Low
Marketing strategy	Low

BI platform offering

The vendor's strategy for helping companies to create a secure, governed, analytical decision-making system as the backbone to cover a broad scope of use cases and cater for a vast number of different users is rated. Additionally, the visibility of the vendor in the market for modern BI & analytics platforms and related uses is judged.

Market distribution of product

This criterion covers the estimation of BI & analytics revenues for each BI & analytics product evaluated in this BARC Score and aims to show the overall market distribution of a particular product. We weight this criterion more heavily than the company's financial performance (see financials).

Product strategy

Vendors are rated on the clarity and completeness of vision for their BI & analytics offering, product roadmap and innovation, as well as the alignment of the company portfolio with current market trends and demands.

Customer satisfaction

In this year's BARC Score, we have included the *Customer Satisfaction* KPI from The BI & Analytics Survey. This takes into account product satisfaction, vendor support and implementer support ratings reported by customers.

Financials

This criterion covers the financial position of the vendor, from market capitalization, cash position and EBITDA to profitability, burn rate and investment rounds. For vendors that are private companies or do not break out the numbers for individual product lines, estimated figures are used. This category includes a scaled overall assessment of the vendor's financial performance.

Geographical coverage

Vendors are evaluated on their global presence. We look at the various geographic regions and major countries in which the company conducts business with both a sales and marketing presence as well as development and support functions.

Ecosystem

In this category, we evaluate the extended ecosystem in which the vendor participates. This includes business partner networks, hardware or cloud infrastructure providers, consulting firms and systems integrators, and other technology alliances. We also evaluate whether each vendor has a dedicated team looking after and recruiting partners.

Sales strategy

To rate a vendor's sales strategy, we look at the various channels through which the company goes to market: with both direct and indirect sales teams, through distributors, value-added resellers (VARs), online channels as well as OEM relationships. We also evaluate the vendor's product pricing and its various sales models, such as perpetual licensing, support subscription, open source and freemium.
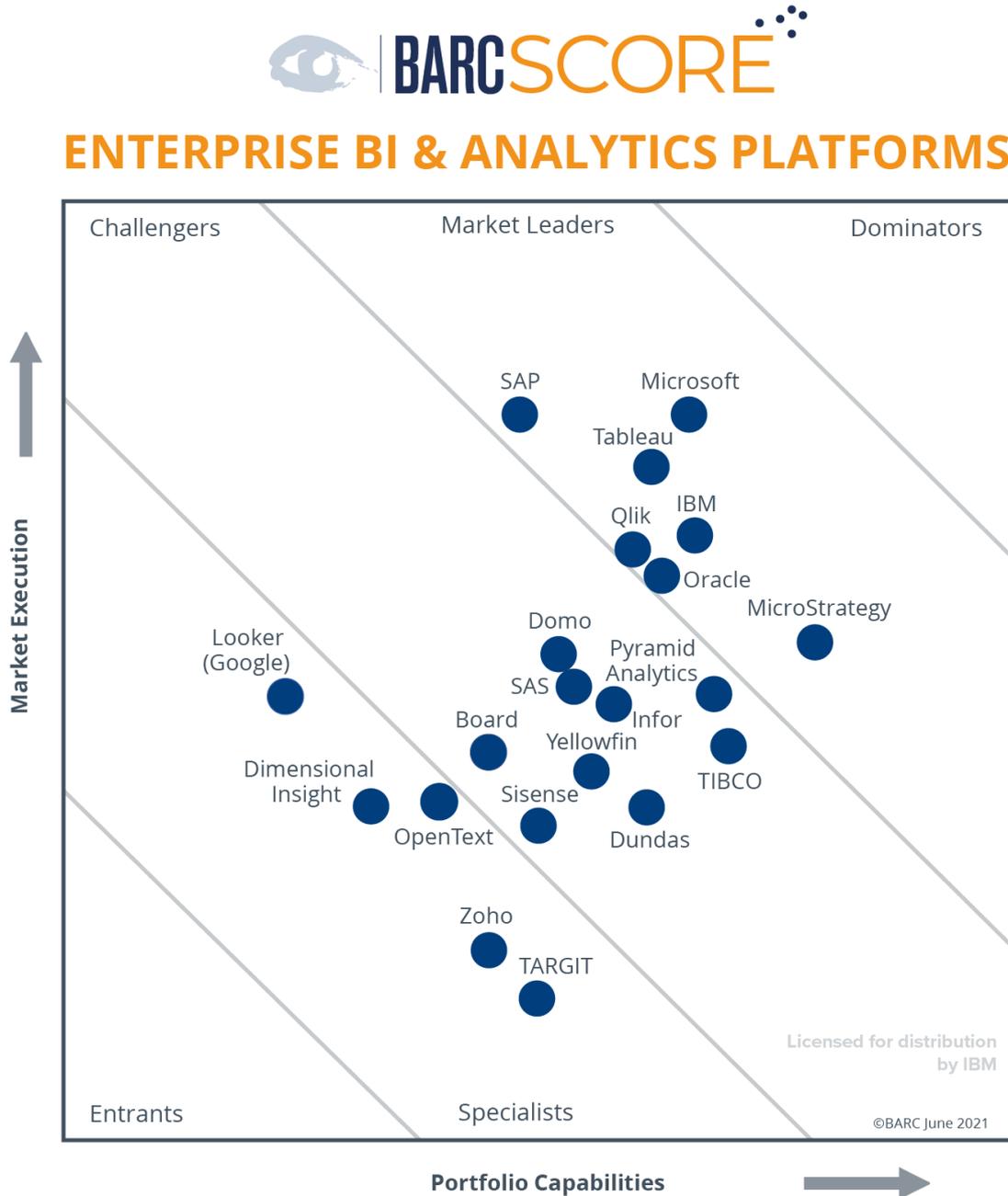
Organizational strength

Vendors are rated on their organizational stability, which is influenced by consistency of corporate strategy, continuity of executive leadership, but also staff turnover, reorganization and layoffs.

Marketing strategy

A vendor's marketing strategy is evaluated by rating its corporate and product messaging, the company's presence in printed media, advertising and social networks, as well as its ability to run events, such as conferences, seminars, roadshows and webinars.

Score

Calculating the individual ratings for all criteria and all vendors produces two scores per company: the portfolio capabilities score and the market execution score, each being plotted on the corresponding axis, resulting in the vendor's dot on the following BARC Score graphic (Figure 1).

Figure 1: BARC Score Enterprise BI & Analytics Platforms, June 2021

Score regions

Vendors can be positioned in one of five regions, depending on their total score on each of the two axes.

Dominators

Dominators are vendors that drive both technology and market adoption in a highly influential manner. They possess both a broad portfolio of market-leading and dominating products with a strong brand as well as a robust commercial prowess through best-in-class sales and marketing programs, an extensive ecosystem of business partners and alliances, and a rock-solid financial position. Dominators are considered a contender in virtually every planned implementation.

Market Leaders

Market leaders are well established vendors that drive strong market adoption, supported by technology innovation and strategic acquisitions and by leveraging robust account management and a solid track record. Their portfolio enjoys high brand awareness in the market and covers an extensive range of technologies and services with only few gaps. Market leaders typically have a large market share, making them a viable contender in almost all implementation scenarios.

Challengers

Challengers come in various shapes and sizes. They can be large vendors tapping into a new market by acquisition and pushing their way in with force, small innovative companies with a promising portfolio but limited sales and marketing resources, or vendors that attempt to disrupt a market with a new technology approach or different business model.

Specialists

Specialists are often smaller vendors with a portfolio focused on a specific market segment. They can be either limited in their technical capabilities by concentrating on certain features and functions, or they may only focus on select geographic regions rather than the global marketplace.

Entrants

Entrants are usually startups with limited reach and visibility in the market. Their product capabilities are incomplete when compared to competitors, and their long-term market potential is still unproven.

Evaluated vendors and products

The latest versions of the following products are evaluated in this BARC Score:

Vendor	Product(s)
Board International	Board
Dimensional Insight	Diver Platform
Domo	Domo Business Cloud
Dundas Data Visualization	Dundas BI
IBM	IBM Cognos Analytics IBM Planning Analytics with Watson IBM Watson Studio
Infor	Infor Birst Infor d/EPM
Looker (Google)	Looker Analytics-related Google Cloud Platform Services
Microsoft	Power BI SQL Server Reporting Services Analytics-related Azure Services such as Data Explorer and ML
MicroStrategy	Analytics Platform
OpenText	OpenText Analytics Suite OpenText Magellan
Oracle	Oracle Analytics Cloud Oracle Analytics Server Oracle EPM Cloud Oracle Hyperion Planning OCI Data Science
Pyramid Analytics	Pyramid
Qlik	Qlik Sense Qlik Catalog Qlik Data Integration
SAP	SAP Analytics Cloud SAP BusinessObjects BI Platform SAP Data Intelligence

Vendor	Product(s)
SAS	SAS Visual Analytics SAS Visual Statistics SAS Visual Data Mining and Machine Learning SAS Data Preparation SAS Visual Forecasting SAS Visual Text Analytics
Sisense	Sisense Fusion Platform
Tableau	Tableau Desktop Tableau Server Tableau Prep Tableau Data Management Tableau Server Management Tableau Mobile
TARGIT	TARGIT Decision Suite
TIBCO	ibi's Analytics Platform Spotfire Data Science Jaspersoft
Yellowfin	Yellowfin BI
Zoho	Zoho Analytics

Vendor evaluations

In the following section, we discuss each vendor in the BARC Score and highlight their strengths and weaknesses based on customer surveys and market research by the authors.

Each vendor description includes vendor-related information, products covered in the BARC Score, and strengths and challenges.

Board International

Chiasso, Switzerland

www.board.com

Board was founded in 1994 and employs more than 490 people worldwide. Both its European head office and software development headquarters are located in Chiasso, Switzerland. A second regional US headquarters is located in Boston, Massachusetts. Board has 25 offices worldwide and a global partner network. More than 2,700 customers worldwide use Board to implement CPM and analytics projects. The company currently has a strong focus on internationalization, particularly by building up its presence in the United States. The ownership of the company changed in 2019, when Nordic Capital acquired a majority share in Board International to support the vendor's continued international expansion. After 27 years, the company's CEO recently stepped down.

Board aims to provide an all-in-one decision-making platform which unifies BI & analytics with CPM and advanced analytics capabilities. The vendor focuses on providing end-to-end support to key decision-making processes in companies by combining self-service capabilities with enterprise scalability and governance. The goal is to deliver an easy-to-use and coding-free toolkit for business power users to build tailored CPM and analytics applications in a technically homogeneous environment.

Board provides a combined product consisting of a front end and a proprietary multidimensional in-memory database called WAVE, which also enables business-user-friendly data modeling. It is a web-based flexible development environment for creating dashboarding, reporting, analysis, planning and predictive analytics applications and can also be used for financial consolidation and strategy management. Due to its tightly integrated front and back ends, the proprietary Board database permits only limited access for third-party front ends.

Over the past few years, Board has invested heavily in trending topics and providing new functionality. Besides BEAM (the vendor's analytical engine for advanced analytics), Board has introduced a cloud offering based on Microsoft Azure, self-service data preparation (called Data Fast Track), storytelling, collaboration and cognitive capabilities incorporated into the system (including cognitive search by natural language query (NLQ)).

Strengths

- Flexible, fully web-based CPM and analytics product with tightly integrated system architecture of proprietary multidimensional in-memory database and front ends.

- Graphical, business-user-oriented development environment for creating complex and flexible analytics and CPM applications without technical programming skills.

- Integrated advanced analytics algorithms as part of the solution, resulting from university cooperation.

- Self-service dashboard creation for end users through assembly of predefined BI objects.

- Company is strongly focused on growth, internationalization and innovation.

Challenges

- The product's flexibility can lead to quite complex handling for inexperienced users when implementing and building intricate applications.

- Prices for Board have increased in recent years. According to customer feedback from 'The Planning Survey' and 'The BI & Analytics Survey', many now consider the product to be costly.

- Although Board offers self-service data preparation, it still has limited capabilities in the area of visual exploration and ad hoc query compared to some competitors.

Dimensional Insight

Burlington, MA, USA

www.dimins.com

Dimensional Insight is a privately held company based in Burlington, MA which started in 1989. The software company aims to provide trusted analytics, KPIs and the industry expertise people need to make informed business decisions. The vendor targets and supports all markets, but has competencies in the healthcare, alcoholic beverages, utilities and manufacturing sectors in the United States, as well as higher education, government, transportation and insurance in international markets.

Dimensional Insight is very customer-centric and provides three core benefits to its customers: (1) its ability to empower users with fast access to critical measures needed to meet operational performance and compliance requirements; (2) its ability to provide users with access to commonly understood, trusted measures through business rules management and (3) its ability to allow users to "dive" deep into their organization's data in any direction to get the answers to their business-critical questions.

The company's product, Diver Platform, includes ETL, data modeling, administration, dashboard development, analysis and reporting, as well as columnar database technology for data storage. Users can navigate data in any direction with performance boosted by a proprietary columnar in-memory engine. Based on its Diver Platform, Dimensional Insight offers rich content such as industry-specific adapters and business rules. Measure Factory, a business rules automation engine designed to give users governed access to measures, is also available. Although its engine is proprietary and is designed to ingest data, Dimensional Insight allows ODBC access to its data model.

Diver Platform consists of installed full and web clients. Recently, Dimensional Insight combined its web and mobile clients into one client called Gateway. The company also started to focus on data science. It integrates predefined advanced analytics models in its applications and offers an R integration in its workbench (ETL client). Although Diver Platform is built to support navigation and analysis of data which the vendor calls information leaping or diving, its visual exploration functionality is limited to predefined interactive dashboard applications. The ETL client requires technical knowledge and lacks ML-based guidance for less-trained business users.

Strengths

- Industry expertise and packaged solutions which are designed to ease access to data and its analysis.

- In delivering content, ETL, in-memory data storage and front ends, Dimensional Insight focuses on providing an end-to-end solution to its customers.

- Strong customer orientation reflected by high levels of customer satisfaction according to BARC surveys.

- Measure Factory offers predefined governed content for selected industries based on common business rules and logic, which can be customized based on customers' needs.

- Self-service creation of dashboards by assembling predefined content/measures incorporated into the solution.

Challenges

- Front ends for data integration and analysis require rather technical, well-trained users.

- Limited visibility and brand awareness outside core markets.

- Limited use of machine learning to guide and assist business power users during data analysis.

Domo

American Fork, UT, USA

www.domo.com

Founded in 2010 in American Fork, Utah, Domo launched its first BI product in 2012, but operated in stealth mode until 2015, approaching customers on a one-on-one basis and asking them to sign a non-disclosure agreement. After 2015, Domo quickly garnered attention through mass marketing campaigns. CEO Josh James raised nearly $700 million in venture capital funding from 48 investors. Domo went public in June 2018 raising an additional $200 million in capital. The company now has over 790 employees and serves more than 2,000 customers.

Domo's Business Cloud platform aims to supply customers with modern, end-to-end BI capabilities such as data integration and management, BI & analytics, as well as intelligent apps. Its product strategy and enhancements are aligned across three pillars: data agility, data literacy and intelligent action.

From the beginning, Domo has focused on helping customers transform the way their business is managed by putting well governed and actionable data in the hands of everyone across the organization. Domo believes that access to all the relevant data is critical in order for business people to best understand their business, ask questions and take well-informed actions. To meet this goal, Domo offers around 1,000 connectors, which it builds and manages itself. Domo Business Cloud was designed to ingest data into the Domo cloud. Over the years, Domo has incorporated federated capabilities to allow data to be queried at source. Recently, the vendor optimized its multi-cloud query capabilities.

Domo believes that business technology must be as easy-to-use and intuitive as mobile consumer applications, while providing enterprise-grade scalability and security features. In line with this, the Business Cloud platform is designed for cloud and mobile first. iOS and Android apps are available for mobile devices. The vendor aims to offer no-code app building so customers can build an app once and deploy it to different clients. Domo is also investing in other trends such as advanced analytics and natural language processing.

Strengths

- Connectors for more than 1,000 data sources and 'Magic ETL', which eases data ingestion.

- Modern, cloud-based architecture for scale with appealing look and feel.

- Data governance features via the Domo Data Warehouse are the foundation for enterprise-wide self-service.

- Ability to create intelligent apps that leverage the governance and security features of the platform, along with write-back capabilities and AI/ML to guide decision-making.

- Sophisticated mobile delivery of all types of highly interactive content helps to spread analytics not only to executives but also employees on the shop and factory floor.

Challenges

- Limited capabilities for large-volume print-oriented reporting compared to leading self-service analytics vendors due to focus on dashboards and analytical apps.

- Data preparation geared at specialists and not as easy to use as competing products. Domo lacks proper guidance for business users to answer their own questions.

- Due to its strong focus on apps, Domo Business Cloud offers less strong visual exploration and data preparation capabilities for business analysts compared to some of its competitors.

Dundas Data Visualization

Toronto, ON, Canada

www.dundas.com

Founded in 1992, Dundas began building its reputation as an innovator in visualization software with its Chart product based on Microsoft technology. In 2007, Dundas sold the Chart franchise to Microsoft. Further expanding its mission, Dundas BI – a full-featured and modern BI platform – was released in 2014 and launched the vendor into the market for all-in-one BI platforms. With this flagship product, Dundas focuses on two main usage scenarios: firstly as an enterprise BI & analytics platform, but also for embedding. Dundas is a privately held company with approximately 100 employees headquartered in the company's only office in Ontario, Canada. The product has over 1,500 installations.

The Dundas BI platform is a modern and integrated full-stack BI platform with core strengths in data visualization, operational dashboards and embedded analytics. With its clean, modern and responsive graphical interface, business users can integrate, prepare, visualize and share data as well as navigate through prebuilt BI applications provided by IT. Besides the ability to store data in an SQL Server or PostgreSQL data warehouse, the product supports live access to data as well as data acquisition into a proprietary in-memory engine. Dundas makes use of modern standards such as HTML5 and has equipped Dundas BI with REST, .NET and JavaScript APIs to support scenarios such as embedding and advanced customizations.

Dundas BI was conceived with an emphasis on ease of use. To protect business users from the complexity of the dashboard creation environment, customers can individually control the functional features it offers. Dundas BI offers interesting support for data discovery scenarios. The steps for data preparation and visualization are tightly integrated, making it feasible to iteratively analyze and enhance data to gain as much insight as possible. Visualizations are automatically created upon adding data to the canvas and there is an option to automatically change visualization types as more data is added. Calculations can be created quickly and directly from within visualizations. Although some improvements have been made, advanced analytics with guidance as well as user advisory for analysts remains one of the few functional areas in which Dundas BI scores lower in terms of functionality than competing vendors.

Strengths

- An end-to-end analytics platform offering both tight governance for 'silver-service' as well as flexibility for self-service.

- Dashboard development environment provides a high level of control over the look, feel and interactivity of applications offering high flexibility to consumers.

- Good connectivity, easy-to-use data preparation and multiple storage options (in-memory, live, data warehouse) power a broad scope of use cases.

- Clean, modern, responsive graphical interfaces.

- Good capabilities for data discovery, especially for data preparation and visual exploration.

Challenges

- Improved but, compared to some competitors, it still has limited advanced analytics functions, which are mostly available through selected integrated statistical functions and external libraries.

- While offering good visual analysis, Dundas lacks automated insights capabilities to help users find relevant signals quickly.

- Guidance and automated recommendations are weak in data preparation, which is otherwise powerful and easy-to-use.

IBM

Armonk, NY, USA

www.ibm.com

IBM® is one of the world's largest vendors of IT hardware, software and services. The company has a global workforce of approximately 345,000 employees and is active in over 170 countries. In 2007, IBM purchased the software vendor Cognos to become the center of its future analytics product portfolio.

IBM offers a comprehensive portfolio of on-premises and cloud analytics, performance management and advanced analytics solutions. The core offerings consist of IBM Cognos Analytics, IBM Planning Analytics with Watson, IBM Watson Studio and IBM SPSS.

Cognos Analytics is IBM's analytics solution and combines ease of use with elaborate governance features in an end-to-end platform. The product is typically used in larger scenarios supporting the needs of many concurrent users as well as large data volumes. Cognos Analytics provides functionality for dashboards, pixel-perfect reporting, stories, data modeling and analysis in a web-based, integrated user experience. On top of that, the solution offers search-based analysis (NLQ) with encapsulated cognitive capabilities aimed at business users. IBM has extended Cognos Analytics in the area of advanced analytics. For instance, Jupyter Notebooks has been incorporated in the user interface to provide more flexibility in data preparation and statistical analysis.

IBM Planning Analytics with Watson is a core element in IBM's performance management portfolio. Planning Analytics is a high-performance, multidimensional in-memory database for planning and analysis with Excel and web front ends.

For advanced analytics, IBM positions Watson Studio as its primary platform. Besides the widely known SPSS capabilities, Watson Studio includes data science modules based on Jupyter Notebooks for development in R and Python, AutoAI, and embedded decision management.

Strengths

- IBM Cognos Analytics (CA) is a well-integrated end-to-end platform for governed analytics for business users that spans data preparation and modeling to analysis, reports and dashboards.

- Reports can be created by business users on the web (CA), polished by professionals and distributed to a large audience.

- Automated insights in 'Explore' (CA) help to find relationships in large data sets, relevant drivers for a metric or create detailed forecasts.

- IBM Planning Analytics offers comprehensive flexibility for business power users to create OLAP applications based on a high-performance database with write-back capabilities.

- Broad capabilities for data mining and advanced analysis with IBM Watson Studio as well as visual business-user-oriented data discovery and cognitive BI with IBM Cognos Analytics.

Challenges

- 'Explore' and 'Dashboards' provide analysis capabilities and guidance for exploration but lack flexibility for visual analyses compared to leading vendors in the visual exploration area.

- While using different BI & analytics products, users will face different UIs. However, dashboards from Cognos Analytics can be embedded in the Planning Analytics Workspace and Watson Studio for example to overcome this issue.

- According to *The BI & Analytics Survey*, query performance has been a major issue that reduces user satisfaction and acceptance. Customers should ensure their databases are optimized to take full advantage of CA's pass-through query technique.

Infor

New York, NY, USA

www.infor.com

Infor is a global US-based vendor of industry-focused business software solutions. The company was founded in 2002, has 170 locations worldwide and employs over 17,000 people. It supports over 67,000 customers directly or through its network of more than 2,180 partners (resellers and OEMs). Infor is privately held by Koch Industries.

Infor has two main solutions for analytics and performance management: Infor Birst and Infor Dynamic Enterprise Performance Management (d/EPM). Despite a functional overlap, Infor has a clear product positioning strategy, splitting its portfolio into analytics and CPM products, which are integrated with each other. Birst is positioned for analytics while Infor d/EPM covers financial planning, reporting and analysis. Both product lines offer tight integration to Infor's vast number of business applications (e.g., ERP, CRM, SCM) to increase their value add for customers through trusted and streamlined analytics. For selected Infor applications (e.g., CloudSuite Analytics, Lawson Analytics), the vendor provides an analytic-ready data warehouse with semantic layer, predefined KPIs, reports and dashboards.

Birst is Infor's cloud-based flagship analytics and BI platform. In addition to providing formatted and ad hoc reporting, dashboarding, self-service data discovery and advanced analytics, Birst offers a full-stack solution that includes ETL and data preparation, data warehousing, mobile access and ML integration. Birst connects to Infor's business applications, to Infor d/EPM's underlying in-memory OLAP database, as well as to non-Infor systems (e.g., SAP, Salesforce). Besides connecting to data live, Birst leverages an S/3-based data lake to store data from any source to feed analytics for business users and data scientists. Third-party tools can directly access Birst's data models.

Infor d/EPM combines pre-delivered business planning applications with a development platform for tech-savvy business power users to build custom CPM and analytics applications. Infor d/EPM connects to Infor ERP solutions as well as non-Infor systems (e.g., SAP, Oracle, etc).

Strengths

- Integrated cloud-based BI platform for formatted and ad hoc reporting, dashboarding and analysis (Birst).

- Modern semantic layer concept to provide both governance and consistency as well as data discovery to support agile development for business users (Birst).

- Data models bridge requirements for governance and flexibility by offering stable yet extensible semantic models that also offer live access to federated data sources (Birst).

- Predefined, embedded analytics and BI applications for a broad number of Infor products by industry to analyze, present and combine data for actionable insights (Birst).

- Integrated flexible application suite for planning, dashboards, reporting, OLAP analysis and forecasting with proprietary multidimensional data storage (Infor d/EPM).

Challenges

- Visual exploration is weaker compared to data discovery tools, limiting the flexibility and appeal to business users who are key to deriving insights.

- Automated insights for consumers are limited significantly, reducing the ability for non-technical users to gain insights without assistance from content creators or IT.

- Data preparation provides limited guidance for business users to help to indicate issues in data (data profiling, next preparation steps and so on).

Looker (Google)[1]

Santa Cruz, CA, USA

www.looker.com

Looker was founded in 2012 in Santa Cruz, CA, and has grown quite quickly since then. In 2015, the vendor had about 200 employees and started to grow its business in Europe with the opening of an office in the UK. Today, 2,000 companies have trusted Looker to power their data-driven cultures. Looker joined Google Cloud in February 2020.

Looker pursues a direct approach to analytics as it is convinced that traditional BI approaches restrict the use of analytics within companies. With traditional BI, Looker claims that only a limited group of users (i.e., analysts) have access to data and the ability to perform ad hoc analysis. Another disadvantage it sees in current BI platforms is the aggregation and lack of availability of row-level detail. As a result, Looker has designed a product that relies strongly on a central and virtual metadata layer created using LookML, its proprietary data description language (abstraction layer on top of SQL). Business users connect to data via this virtual layer, allowing them to do ad hoc analysis via a point-and-click interface. To underline its core strength and emphasis on data, the vendor has started to position its product as a unified platform that powers data experiences and delivers actionable business insights to employees at the point of decision.

Looker is a web-based platform focused on providing a governed, standardized and trusted view of business data. It is particularly strong in embedding scenarios and for creating interactive visualizations and dashboard applications. Looker integrates data into the daily workflows of users to allow organizations to extract value from data at web-scale. In addition, the product offers business-user-oriented features to query different data sources ad hoc using the LookML metadata layer.

Looker has worked with a number of technology and consulting partners. In general, the company is quite serious about its partner strategy. It has expanded its network and improved its partner strategy in recent years. Most of the consulting partners are based in the United States but work is being done to identify partners in Europe in order to boost growth in this region. Looker does not target any specific customer profile. The product was designed to support scalable scenarios with the ambition to grow in those.

Strengths

- Modern solution with good functionality for ad hoc query, dashboard creation and embedding/white-labeling scenarios.

- Independence towards and support of many data sources – does not use its own storage.

- Central metadata layer concept with versioning through Git to support governance.

- Integration with several business software systems to act on data using Looker Actions.

- Tighter integration with several Google products such as Google Marketing Platform & Google Ads and Google BigQuery.

Challenges

- Limited breadth of the solution: limitations in formatted reporting, BI application creation and visual exploration.

- Metadata layer is script-based and has to be created by a tech-savvy user.

- No focus on support of data preparation and upload of data by business power users.

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[1] Looker did not fully participate in this research

Microsoft

Redmond, WA, USA

www.microsoft.com

Microsoft, the world's largest software company, was founded in 1975 and has become a household name primarily due to its Windows operating system and Office suite. The vendor has a broad enterprise offering too, ranging from cloud (Azure) to database to its ERP products.

Microsoft was among the first vendors to focus on providing cloud-based solutions for analytics, a path later followed by several competitors. Microsoft Azure is used by many customers as a cloud computing platform.

Microsoft concentrates its core analytics and BI capabilities in Power BI and brings in tools and capabilities from Microsoft Azure such as Azure Data Explorer and Azure ML for specific usage scenarios. Power BI is a cloud-based analytics product consisting of Power BI Desktop (a full client for data preparation, dashboards and analysis) and Power BI Service (a web application for content publishing and sharing). It is an interactive tool for data visualization geared at enabling business users to analyze data and share insights predominantly via dashboards. Power BI Premium offers dedicated capacity, which is especially useful in large deployments. The vendor has also incorporated formatted reporting functionality from Reporting Services as paginated reports into Power BI to provide a broader feature set and to streamline and integrate analytics capabilities. Power BI Report Server delivers a subset of features to on-premises customers, mostly to facilitate their migration to the cloud.

Data visualization in Power BI delivers rich visualizations but is limited in flexibility by its dashboard-oriented approach. NLQ makes it easy for users to retrieve relevant visualizations. Guided analytics is mostly covered by 'Quick Insights', a feature that automatically analyzes data sets for patterns and outliers and provides the user with suggestions about relevant findings. The 'Insight' feature can be used to receive information about interesting patterns in the data a specific visualization is based on. For advanced requirements, Microsoft has integrated AutoML features into Power BI Data Flows.

Strengths

- Power BI, the business-user-oriented data discovery solution, is attractively priced, which makes it easy for organizations and individual users to get started with it.

- 'Quick Insights' and NLQ guide users when exploring new data sets with auto insights while data preparation offers ML-based productivity features too.

- Governance and aligned KPIs and master data in Power BI models through tight integration with Azure Data Services and SQL Server.

- Deep integration with the vendor's front ends such as Office and Teams combined with competitive pricing motivates companies to leverage Power BI for analytics.

- Azure platform with different data management and analytics services, which extend the core functionality of Power BI.

Challenges

- Formatted (paginated) reports enhance the reach of Power BI but building these reports is still a developer's task rather than one for typical business users.

- Features for distributing static content to a large user base are below average compared to other vendors in this BARC Score, curbing Power BI's value in classic BI scenarios.

- The on-premises Power BI Report Server delivers only a subset of the functions of Power BI Service and should not be expected to achieve feature parity.

MicroStrategy

McLean, VA, USA

www.microstrategy.com

MicroStrategy is one of the best-known vendors in the analytics and BI market worldwide. It was the first vendor to release a fully integrated product that provides formatted reports, dashboards and interactive data discovery in a single solution using the same infrastructure, both on-premises and in the cloud. With its library of statistical and advanced analytics functions, the vendor offers comprehensive analytics capabilities for a wide variety of use cases.

MicroStrategy is based on a tightly integrated architecture, built from the ground up without acquisitions. The vendor focuses on providing the solutions a customer needs to become an 'Intelligent Enterprise'. The analytics and mobility suite offers different clients, which connect an enterprise semantic layer to deliver common and governed business logic across multiple data sources. The vendor has invested much over the years in supporting 200+ connectors to data sources, as well as offering native support for Hadoop systems and cloud DBMSs and data lakes. Besides direct connectivity to source systems, MicroStrategy offers an integrated in-memory engine to drive faster performance on large data sets.

MicroStrategy has always taken market trends seriously, at times leading the way. The vendor provides a no-code development framework to build native mobile apps. Offline capabilities and write-back data entry for transactions and operational use cases are available too. Increasingly, MicroStrategy is taking an open approach by allowing third-party tools such as Tableau, Qlik, Power BI, Jupyter and RStudio to access its governed datasets. To extend the adoption of analytics by business users, MicroStrategy introduced 'HyperIntelligence' to surface contextual information to users directly in web applications, on mobile devices and in selected productivity applications with zero clicks. This allows businesses to inject real-time, contextual insights and recommendations into users' browser-based or mobile workflows – bringing analytics closer to their work. Prior to that, the vendor introduced 'Dossiers' to provide a modern way to present and visualize data. Dossiers are interactive applications that organize dashboards or reports in a familiar book-oriented chapter and page format.

Strengths

- Single integrated platform for formatted reporting, dashboards, analysis and analytics application building with good performance in large environments.

- 'Dossiers' for visual analysis providing self-service analytics integrated in the platform with powerful, guided and business-user-friendly data preparation.

- Connectivity and connectors for third-party analytics tools such as Tableau, Qlik and Power BI open up access to its semantic layer.

- 'HyperIntelligence' to surface contextual information with zero clicks and sophisticated reporting and distribution deliver highly personalized information to all user types.

- Visual analysis solution for self-service BI scenarios included in the platform, with web and desktop-based clients for ad hoc reporting, query creation and analysis.

Challenges

- 'Documents' and 'Dossiers' are different content types: 'Documents' are highly formatted reports built by developers while 'Dossiers' are more lightweight and aimed at business users.

- Despite leveraging its own in-memory engine, users rate performance below average, but this can partly be attributed to significantly above-average data volumes consumed.

- Collaboration on content creation, especially for integrating sandbox data into governed environments, needs further improvement (e.g., via workflows).

OpenText

Waterloo, ON, Canada

www.opentext.com

OpenText, is a global provider of enterprise information management (EIM), especially known for its enterprise content management (ECM) and business process management (BPM) solutions. In January 2015, OpenText acquired Actuate, one of the earliest providers of business intelligence software. Actuate launched the open source Eclipse BIRT (Business Intelligence and Reporting Tools) project in 2004. To complement its portfolio with a solution for predictive analytics, Actuate acquired Quiterian in 2012.

Together with other OpenText products, Actuate's portfolio is now part of the OpenText artificial intelligence (AI) and analytics offerings branded as Magellan. The core business intelligence and analytics product is called OpenText Magellan Analytics Suite. This can be complemented by further analytics products for open source ML, text mining and sentiment analysis.

OpenText Analytics Suite consists of OpenText Magellan BI & Reporting and OpenText Magellan Data Discovery. OpenText Magellan BI & Reporting is a server-based application that connects to various data sources and consists of modules for formatted reporting, ad hoc reporting, dashboarding and analysis. Development of applications and reports, as well as access to data sources, takes place in both the web-based designer and the OpenText Magellan Analytics Designer. End users work with web-based modules for ad hoc reporting, simple data navigation, OLAP analysis and dashboarding. Due to the fact that OpenText Magellan BI & Reporting is equipped with open APIs, the solution is often seen in open source and embedding scenarios. OpenText Magellan Data Discovery is a combination of in-memory and columnar-based data storage with a web-based front end for visual data mining and predictive analysis. Data required for data mining and analysis is integrated using a built-in ETL module. The solution is aimed at data scientists and analysts from business departments and offers predefined data mining algorithms and analysis methods such as forecasting, clustering, Venn diagrams, pivot tables, bubble charts and so on.

Strengths

- Good capabilities for developing pixel-perfect reports.

- Ad hoc reporting and data navigation suitable for business users.

- OpenText Magellan Data Discovery as a business-user-oriented solution for predictive analysis.

- Strong orientation towards product integration/embedding and provision of a good set of APIs for implementation of individual needs.

- Joined the AI and machine learning market with Magellan, which uses open source components.

Challenges

- OpenText Magellan Data Discovery is limited to predefined analysis and data mining methods; there is no integration of programming languages for data mining such as R or SAS. However, other products such as OpenText Magellan and OpenText Magellan Analytics Suite can integrate with other libraries such as R and MLlib.

- Limited reporting features for business users: Studio (OpenText's ad hoc reporting component) has less functionality than some competitors.

- Although the integration between OpenText Data Discovery and OpenText BI & Reporting has improved, users will face different UIs during data analysis and visualization.

Oracle

Austin, TX, USA

www.oracle.com

Oracle is a global provider of enterprise cloud computing, offering software, platform, infrastructure and even data as a service. In 2018, Oracle acquired the machine learning platform datascience.com, re-launched as OCI Data Science, which can be leveraged for ML-related use cases. The company currently employs more than 135,000 people worldwide.

The Oracle Analytics offering (OA) rests on three major pillars: Oracle Analytics Cloud (OAC), its flagship product for analytics and BI; Oracle Analytics Server (OAS) for on-premises and multi-cloud deployments; and Fusion Analytics for Oracle's ERP, HCM, Customer Experience and Supply Chain.

Oracle Analytics Cloud incorporates business-user-oriented capabilities for the complete analytics cycle. It offers modules for developing and deploying formatted reports, interactive dashboards and no-code mobile analytical applications. Data preparation (Data Flows) is also provided by OA as well as visual analysis in a comprehensive and integrated analytics platform. Furthermore, integration with Oracle Autonomous Data Warehouse (ADW) is constantly evolving to benefit from central and governed data models. Oracle Analytics Server, the on-premises version of OAC, brings all the capabilities of the cloud platform to organizations requiring on-premises deployment options.

With 'Explain', users can leverage automated insights generation powered by ML and NLG. Relevant drivers, patterns and clusters are identified and visualized with little to no effort. Beyond that, forecasts leveraging weighting algorithms can be created based on the drivers identified with one click too. Natural language queries ('Ask') can be used to analyze data without deep technical know-how or to search in all data sets cataloged in any of the 28 languages supported.

Complementing the portfolio, machine learning algorithms are embedded out of the box with Oracle Analytics Cloud. R and Python scripts can be embedded in OAC for advanced analytics applications. Additionally, ML algorithms embedded in Oracle databases can be leveraged without shifting data.

Strengths

- Cloud and web-based platform for formatted and ad hoc reporting, analysis, visualization, data preparation and dashboards in one suite.

- 'Explain' auto insights based on ML and 'Ask' NLQ drive acceptance and lower the barrier for business users to use analytics by helping them to find relevant signals for decision-making.

- Oracle offers the possibility to build independent semantic models for high flexibility as well as weaving models together for an enterprise-wide view of data.

- Powerful and easy-to-use data preparation with good data profiling and user guidance through recommendations for transforming and enhancing data.

- Action framework for triggering external events and navigation within dashboards.

Challenges

- The integration between some components (e.g., Publisher and Visualize) in OAC is at data level only.

- Limited availability of interactive formats such as data stories to transfer insights to its audience.

- Two data modeling environments which are not fully integrated. Data models created by business analysts cannot be easily deployed to the central semantic layer.

Pyramid Analytics

Amsterdam, Netherlands

www.pyramidanalytics.com

Founded in 2009, Pyramid Analytics is a privately held software company with more than 175 employees. Its first BI product, BI Office, was launched in 2012. The company is headquartered in the Netherlands and has offices in the United States, Israel and the United Kingdom. It continues to grow and now supports more than 750 enterprise customers.

The Pyramid platform combines data wrangling, data discovery, dashboards, machine learning, advanced analysis and reporting into a single enterprise analytics platform. It was designed from inception to bridge the gap between self-service and IT-driven BI, providing agility for end users while IT retains centralized control. This fosters enterprise-wide collaboration through the sharing of business logic, content and commentary.

Pyramid is a server-based platform that is completely browser-based. The platform is device and operating system agnostic with full gesture support on touchscreen and mobile devices. Furthermore, it supports REST API to cater for scenarios such as embedding and automation. Pyramid's analytics engine, 'PYRANA', drives both querying and analytic calculations across different data sources using ANSI SQL or MDX – which enables fast in-place analytics on large data sets. This extends direct analysis to numerous relational, in-memory, big data and unstructured data sources natively – including Pyramid's own proprietary in-memory engine. Pyramid now extends certified support to various SAP data sources, making it a viable alternative to leverage data from, for example, BW/4HANA without duplicating it.

Pyramid offers improved data preparation and modeling features to support data integration and processing. Its open architecture means the software can be deployed in different environments: cloud, hybrid or on-premises. For AI and machine learning, the vendor offers sophisticated R, Python, MLib, Weka and TensorFlow integrations.

Strengths

- Well-integrated product for reporting, dashboards, data preparation and analysis – all in a single, enterprise-grade platform.

- Good connectivity with in-database analytics to various data sources including business applications such as SAP leading to high performance perception by users.

- Open architecture and provision of APIs suitable for various analytics use cases beyond classic BI such as embedding and analytics applications.

- Provision of enterprise platform features such as governance, security, lineage, impact analysis, versioning and content distribution for large-scale deployments.

- Well thought-out capabilities for dynamic text for storytelling.

Challenges

- Visual data exploration for business users needs improvement to deliver intuitive analysis to find patterns and outliers.

- Feature-rich environment potentially overwhelms creators from business departments curbing use and value of analytics despite introduction of streamlined 'Smart' and 'Light' interfaces.

- Active guidance features offer basic help but lack functionality to assist business users when preparing data or creating analytics content.

Qlik

King of Prussia, PA, USA

www.qlik.com

Qlik, originally founded in 1993 in Lund, Sweden, moved its headquarters to the United States in 2005 after raising funds from several venture capital firms. In 2010 Qlik went public on NASDAQ and then went private again in 2016 after being acquired by the private equity company Thoma Bravo.

Qlik's lead product was QlikView until the general availability of Qlik Sense in 2014. Today, after much organic development and the acquisition of seven other companies, Qlik offers a portfolio of end-to-end platform-based solutions for analytics, data management and developers, as well as several value-added offerings that provide enhanced capabilities. Most of the value-added offerings are targeted primarily at on-premises customers as most of the features are integrated in the Qlik Sense software as a service option.

With this product suite, Qlik aims to provide customers with what it calls "active intelligence", which is based on continuous intelligence from real-time, up-to-date information delivered through an analytics data pipeline with dynamic business content and logic. It is designed to trigger immediate actions.

Qlik Sense is the company's enterprise-level analytics platform for analytics, supporting a broad spectrum of analytics use cases across organizations. It is powered by Qlik's associative engine and offers flexible and fast access to its in-memory data sets. Qlik's Insight Advisor works in conjunction with the associative engine to provide augmented analytics capabilities including search, conversational and natural language analytics. Data preparation, traditionally scripting-oriented in Qlik solutions, can now mostly be conducted in a visual environment. These improvements enhance the productivity of data preparation for developers and they also make data preparation accessible for business users. In case customers require advanced transformations, the product supports scripting for data preparation.

Qlik Catalog (formerly Qlik Data Catalyst), together with recently acquired Attunity's real-time data replication and data warehouse automation offerings, make up Qlik's enterprise data management solution.

Strengths

- A business-oriented platform for analytics covering dashboards, interactive analytical applications, analyses and reports.

- Dashboards, analytical apps and data stories are Qlik's clear hallmarks, all powered by fast and responsive queries and interactive, mobile-ready interfaces.

- Data preparation is very powerful and features such as join detection based on content rather than field names are not common among competitors.

- Implementation of embedded scenarios or creation of individual UIs using Qlik Sense APIs.

- Qlik sets itself high expectations regarding query performance and hardly ever falls short of them thanks to its mature in-memory engine.

Challenges

- Limited built-in functionality for data governance to align the definitions of KPIs and master data across distinct applications.

- Limited direct query capabilities, particularly to OLAP, due to Qlik's bias towards ingesting data to its in-memory engine for greater flexibility and performance.

- Creating and distributing page-oriented formatted reports requires the developer-oriented NPrinting add-on to combine visuals and tables from various sources.

SAP

Walldorf, Germany

www.sap.com

SAP was founded in Germany in 1972 as a business applications company. The vendor now employs more than 100,000 people worldwide and has a turnover of €27.34 bn. SAP is one of the largest business software vendors in the world.

The vendor's analytics portfolio encompasses cloud-based and on-premises solutions for business intelligence, augmented and predictive analytics, and planning. Like other vendors, SAP is heavily investing in its cloud portfolio. SAP's analytics solutions are spread across different product lines. For analytics and BI, the cloud-based SAP Analytics Cloud and the on-premises SAP BusinessObjects BI are the core offerings. Predictive analytics functionality for business users is covered in SAP Analytics Cloud while more extensive functions for data science are made available in SAP Data Intelligence.

SAP Analytics Cloud is SAP's strategic cloud analytics platform. It combines analytics capabilities such as data discovery and visualization, enterprise planning and augmented analytics into an integrated all-in-one platform. SAP Analytics Cloud has a modern and mostly user-friendly front end that offers users guided insights in data through NLQ and NLG as well as automated insights via 'Smart Predict' and 'Smart Discovery'. Analytics Designer is a module for building highly interactive and custom dashboards. While SAP Analytics Cloud in general is aimed at business users creating analytics content, Analytics Designer is clearly a developer tool destined to replace the on-premises product Lumira Designer.

In addition to using SAP Analytics Cloud with its own data models, it can also be used as a front end for other SAP data sources (e.g., SAP HANA, SAP BW/4HANA, SAP Data Warehouse Cloud and SAP BusinessObjects BI) in hybrid cloud scenarios without moving, caching or persisting the data into the cloud thanks to exclusive connectivity and live access.

Strengths

- SAP Analytics Cloud is an integrated business-user-oriented solution for analytics and planning with embedded functionality for augmented analytics and application design.

- 'Smart Predict', 'Smart Insights' and 'Smart Discovery' together with NLG functions help users to dig deep into data sets quickly by surfacing trends and outliers.

- Exclusive connectivity, live access, embedded analytics and prebuilt content available for SAP's own data sources and applications speed up implementation and help to gain insights from these systems.

- Ongoing improvements in the integration of SAP Analytics Cloud with SAP Data Warehouse Cloud and SAP Data Intelligence to provide unified data and analytics across the organization.

- On-premises platform for formatted and ad hoc reporting, analysis, dashboarding and custom application design, suitable for medium and large deployments (SAP BusinessObjects BI).

Challenges

- Enterprise reporting (especially bursting) is not fully supported in SAP Analytics Cloud due to a lack of advanced formatting options as well as more options to distribute content to users.

- Data source connectors are focused on SAP data sources with a lower number of connectors available than leading competitors, especially to competing business applications.

- Data preparation capabilities are below average compared to other vendors in this report, resulting in challenges for business users to leverage all the data sources required.

SAS

Cary, NC, USA

www.sas.com

Founded in 1976, SAS is a privately held company and a well-known brand in the analytics and business intelligence market. The vendor's aim is to make analytics available everywhere and for everyone.

SAS Viya is an open and cloud-ready end-to-end platform for analytics, which extends the SAS Platform to serve all types of customers' analytical needs. Viya was designed as a massively parallel, distributed environment which connects to various data sources and can be run on-premises or in the cloud. SAS has made a point of creating an open architecture which not only supports SAS code but also languages such as R, Python, Java and Lua directly or through APIs to enhance its scalability and serve the appetite of data scientists for these tools. Viya consists of a set of micro services and an in-memory engine called SAS Cloud Analytics Services (CAS) for execution in a single-machine or distributed mode.

Viya houses several different products and solutions. Business users typically access SAS Visual Analytics (VA) for self-service analytics. This product line focuses on visual analysis, dashboarding and analytics apps. Also available with VA is the ability to build conversational interfaces and chatbots. Moreover, customers can use the Visual Analytics SDK to embed live, interactive VA visualizations into their custom web apps. In addition, a Microsoft 365 integration is included with VA, allowing VA insights to be embedded in Excel documents.

SAS Data Preparation is also aimed at business users and was designed to load data into the internal Viya in-memory engine. Add-on products for advanced business users and data scientists such as SAS Visual Statistics and SAS Visual Data Mining and Machine Learning are also available. The integration with VA offers the opportunity to extend analytics applications with advanced analytics models.

The vendor offers a variety of analytics applications to specifically address the needs of different industries, especially banking and insurance. SAS provides prebuilt content for these industries based on its Viya platform to help buying companies implement and operationalize complicated analytics use cases.

Strengths

- Business-user-oriented end-to-end analytics platform offering data preparation, visual analysis, analytical apps and dashboards that can be enhanced with advanced analytics models.

- Strong guidance in analytics (auto insights) for detecting correlations, clusters and patterns or calculating decision trees and automated predictions supported by NLG.

- Users get recommendations during data preparation to enhance and shape data for analytics requirements, speeding up the process.

- Viya's in-memory engine CAS was designed as a scalable architecture for substantial amounts of data and large numbers of concurrent users.

- Strong analytics and data mining capabilities through seamless integration with SAS Visual Statistics and SAS Visual Data Mining and Machine Learning.

Challenges

- As VA was mainly built for digital viewers, print-oriented formatted reporting is not a strength. However, some print formatting options are available.

- Building dashboards and analytical applications in VA is not as easy and comprehensive as in some competing products.

- Business users need to focus when building dashboards and reports as they will probably need only a small percentage of the functionality provided.

Sisense

New York, NY, USA

www.sisense.com

Established in 2004, Sisense is a well-known analytics and BI vendor headquartered in New York City. The company currently has more than 800 employees and customers in 170 countries. In 2019, Sisense acquired Periscope Data, a company founded in 2012 and strongly focused on advanced analytics and the creation of data pipelines.

Sisense helps its customers to simplify complex data projects with data preparation, analytics and visual exploration capabilities that can be deployed on-premises or in cloud environments. The Sisense platform supports white-labeled applications that can be embedded in various external solutions. It was designed to leverage all data by either extracting data into its own columnar database or directly connecting to high performance databases. In general, Sisense is geared to data engineers who prepare data for analysis, analysts building insights and developers who embed and integrate analytics into purpose-built analytic apps.

Sisense is an end-to-end platform for creating dashboards and applications that can connect to data from various sources. Tight governance features are woven into the platform based on the semantic layer and internal data storage. The platform follows an API-first approach, allowing the vendor to evolve it quickly and offer a developer-oriented, extensible and open solution with numerous options to integrate into third-party solutions.

Sisense typically takes market trends seriously and adapts its software quickly in line with current market developments. This is largely enabled by the API-first approach. For instance, the vendor was early to rearchitect its platform in a modern containerized microservices architecture. Moreover, it has integrated NLQ and NLG to further lower the entry barrier for users and implemented 'Sisense AI' to support developers in laborious tasks such as data deduplication. Sisense also offers responsive containers to bring all analytics applications to mobile devices without refactoring. With the acquisition of Periscope Data, the vendor has further enhanced its data pipelining and advanced analytics capabilities.

Strengths

- End-to-end analytics platform powering data ingestion and preparation to present information to users through multiple channels within a single integrated and governed environment.

- Internal columnar data store with proprietary In-Chip technology for performance acceleration is fast, mature and open for access by third-party tools.

- Highly interactive and flexible dashboards and analytics applications to support business users in pure analytics scenarios, on mobile devices or embedded in source applications.

- Availability of APIs and JavaScript library for embedding purposes.

- Sisense for Cloud Data Teams is a modern cloud-based solution for creating data pipelines and advanced analytics.

Challenges

- Limited capabilities for page-oriented reporting and content distribution compared to leading competitors in this area.

- Data modeling is not as intuitive as competing tools and requires coding for certain simple transformations. However, it does offer a lot of flexibility to developers.

- User guidance is made available via Sisense AI but offers limited help to consumers and producers during data preparation and analysis.

Tableau

Seattle, WA, USA

www.tableau.com

Tableau Software emerged from scientific research at Stanford University and was founded in 2003. The company has grown strongly in recent years and was acquired by Salesforce in 2019. However, it remains a mostly independent business unit focusing on its target audience.

Tableau offers an analytics platform and associated methodology which aims to help customers build their data cultures to empower better decision-making. Self-service data analysis is combined with self-service data management to enable companies to harness the power of their data assets. The vendor is committed to developing software that requires little training and allows business users to interpret data, mostly by means of interactive visualization.

The intuitive user interface, built-in intelligence and option for in-memory data processing to optimize performance contribute to the popularity of this solution for visual analysis, dashboarding and data discovery. Tableau's openness to a variety of data sources is one of its strengths, as it is not required to rehost data to use Tableau. The solution allows users to query data live from different data sources, to combine data from across these sources, or to move the data into its own 'Hyper' database for analysis.

Data preparation in Tableau can be quick as many manipulations can be made directly while analyzing data, enabling a truly iterative approach to data discovery. With Tableau Prep, data preparation has been enhanced with deeper functionality and a more visual approach with recommendations for data shaping, profiling and enhanced traceability.

Tableau also continues to focus on improving and growing its self-service analytics platform into a modern enterprise-wide analytics platform. Governance functions such as data source certification and ML-powered data source recommendations have been introduced. Tableau has also expanded its platform with AI-driven explanations of data through a feature called 'Explain Data' and the ability to analyze data using natural language with the 'Ask Data' feature. Additionally, the auto-ML capabilities of Salesforce's Einstein Discovery have been integrated with Tableau to provide advanced predictions and recommended next best actions.

Strengths

- Easy-to-use user interface combined with good user guidance leading to high acceptance by data literate business users and casual users alike.

- Visual analysis with built-in user guidance and good interactivity enables business users to find answers to urgent business questions, even in cluttered data sets.

- Data profiling and recommendations are part of data preparation that supports access to a broad number of data sources (live and cached) including cross-database joins.

- Interactive, mobile-ready and appealing dashboards and data stories are built with little effort by compiling, combining and refining data visualizations.

- Tableau Einstein Discovery extends Tableau's analytical capabilities with machine learning.

Challenges

- Not all data prep functions can be leveraged when running live queries (e.g., pivoting)

- Although more and more functionality (and Prep Builder) is available on the web, Tableau Desktop is still needed for data management and certain data sources.

- Formatted reporting lacks the formatting and distribution functions that set apart the leaders in this area.

TARGIT

Aalborg, Denmark

www.targit.com

TARGIT is a privately-owned software provider founded in 1986 with its headquarters in Aalborg, Denmark. The company has close to 8,000 customers, most of whom are located in Europe and North America, while one-third are distributed across the rest of the world.

TARGIT is positioned well for companies of all sizes requiring an all-integrated BI platform with vertical content. TARGIT Decision Suite offers integrated self-service analysis, ad hoc reporting and dashboards with capabilities for batch reporting, mobility, slideshows and data mashups. Through a no-footprint web-client, TARGIT provides capabilities for embedding of dashboard applications or visuals into other applications and web portals. TARGIT's recently introduced document model is intended to reduce the effort required to design content and make it available across all devices and output types.

TARGIT has made significant inroads, particularly among Microsoft Dynamics customers. The company offers a multitude of vertical solutions. The most prominent are those for manufacturing and retail, while niche solutions for heavy machinery, waste management, fleet management, medical billing, fashion design and apparel are showing traction as well. Providing not only a BI solution but also knowledge in the software remains a strong focus of TARGIT. The vendor continues to add verticals and predefined content to its portfolio.

For several years, TARGIT has invested heavily in modernizing its solution. First, it began to reduce the solution's Microsoft dependency by enabling customers to access data sources other than Microsoft SQL Server. Now, an option to use its own in-memory database, as well as access to a number of further different data sources has been introduced. TARGIT continues to work on enhancing its enterprise features by improving the deployment process and optimizing the UI/UX experience to enable designers to create dashboards, analyses and reports that are ready for easy consumption on large enterprise portals with better support for an improved cross-platform experience.

Strengths

- Business-user-oriented BI platform for reporting, analysis and dashboards.

- One document type for different output formats to ease content development.

- Enterprise functionality for data governance, reporting, distribution, deployment and logging.

- Agents for monitoring data and alerting.

- Accelerators and predefined content for Microsoft Dynamics NAV, AX, CRM and GP and a growing list of CRM, ERP and DMS systems.

Challenges

- Microsoft-centric approach with Windows dependencies, which makes TARGIT less interesting for organizations with a Linux platform focus.

- Although especially OLAP analysis is particularly strong, the vendor does offer less support for visual data exploration and data preparation compared to many of its competitors.

- The use of ML and AI to guide users through data preparation and analysis is behind the competition.

TIBCO

Palo Alto, CA, USA

www.tibco.com

Having initially focused on infrastructure software, TIBCO now aims to help companies to become digital enterprises by building a data-centric view of the business connecting devices and people. Its portfolio is built on three foundational pillars: connect, unify and predict. The first stands for the connection of data sources, devices and applications, and is reflected in the TIBCO Cloud Integration and TIBCO Cloud Mashery products. 'Unify' represents the intelligent data management available in products such as TIBCO Data Virtualization and TIBCO EBX Software. The third pillar focuses on analytics and contains products such as TIBCO Spotfire, TIBCO Data Science and TIBCO Streaming. In 2020, TIBCO acquired the BI & analytics company Information Builders with its data management and analytics portfolio. This is currently being integrated into TIBCO's 'unify' and 'predict' pillars.

TIBCO's analytics portfolio provides comprehensive capabilities to support a wide range of analytical scenarios. With TIBCO Data Science and TIBCO Spotfire, the vendor offers advanced analytics and data discovery capabilities. The recently acquired ibi analytics platform has some overlapping functionality but is more strongly focused on enterprise BI & analytics use cases. The latter is a web-based BI environment with front ends and decision support tools for formatted reporting, ad hoc reporting, dashboards and analysis, as well as offering a custom application development environment. One of the solution's core strengths is the central administration and publication of BI & analytics content to large groups of internal and external recipients.

In 2014, TIBCO acquired the open-source vendor Jaspersoft. TIBCO Jaspersoft offers embedded reporting, dashboarding and data integration and targets customers looking for embedded BI tools.

Strengths

- Spotfire is designed to support business users with different types of analysis: visual, geo, streaming and advanced statistical analytics.

- ibi's analytics platform is a very flexible and scalable solution for formatted reporting for large user groups and highly-formatted documents, infographics, ad hoc reporting, dashboarding, analysis and creating individual BI applications for operational BI.

- Coverage of embedding scenarios through a JavaScript API and visualize.js, which allows for seamless integration of analytics into web applications (Jaspersoft).

- Comprehensive portfolio to cover data management needs.

- Comprehensive portfolio for advanced analytics.

Challenges

- Overlapping portfolio built up by acquisitions. Customers should carefully review their requirements and choose the most suitable tool.

- Some product interfaces are not up to current standards, limiting usability when creating data as well as the clarity required to facilitate the understanding of analytics outcomes.

- Clear communication of future strategy and roadmap in the area of BI & analytics is needed by TIBCO's customers following the recent acquisition of Information Builders.

Yellowfin

Melbourne, Vic, Australia

www.yellowfinbi.com

Yellowfin, founded in Melbourne in 2003, is a BI software company that set out to fundamentally change the approach towards BI because the founders felt that traditional BI had become more complicated and expensive than it needed to be. Yellowfin sells its solutions directly or via its strong network of more than 600 partners worldwide. While advertising Yellowfin as a one-stop shop for analytics, a further focus lies on embedding white-labeled BI & analytics capabilities into other solutions, significantly expanding the brand's reach.

Yellowfin believes that organizations are more successful when all their employees engage with data. Therefore, the vendor has always put an emphasis on business users consuming analytics instead of power users creating content. Yellowfin is a mature, user-friendly BI & analytics platform that has evolved from a successful reporting and dashboard product to support an emerging style of analytics characterized by governed data discovery and collaboration. Besides engaging visualizations, the company focuses on making BI content consumption as easy as possible.

To transfer insights to its audience, the platform offers interactive formats such as data stories and dashboards. Yellowfin includes 'Smart Analysis' and 'Auto Analyze' for comparing metrics and analyzing data sets behind the scenes and provides users with ranked and commented (NLG) highlights to speed up time to insight. The company continues to invest in machine learning following the introduction of 'Signals', an automated insights feature designed to show users significant changes in patterns and outliers. In contrast to threshold-based alerts, Signals uses different statistical methods to discover outliers and patterns in data. This feature is included in the new mobile app, which aims to provide relevant data and insights instead of predefined dashboards. Yellowfin also has extensive collaboration features.

For advanced analytics use cases, Yellowfin integrates with libraries and products such as R, Python, TensorFlow, H2O, PMML, SPSS and SAS.

Strengths

- Automated insights in Signals actively guide consumers through analyses and provide context for reports.

- A broad range of innovative features such as storyboarding and collaboration to get more action out of insights gleaned.

- Data preparation offers good data profiling and allows business users to extend the semantic model or export data to a data warehouse.

- Very easy to use for consumers. The clean user interface is optimized to focus user attention on what is important.

- Support of embedded BI usage scenarios.

Challenges

- Focus on live access contributes to the perception of poor performance by users, which can often be attributed to the underlying database.

- Visual analysis offers limited flexibility via the dashboard-oriented approach, which is often not sufficient for power users looking for patterns and outliers in data.

- Page-oriented standard reporting lacks pixel-perfect orientation compared to the leading vendors in this BARC Score.

Zoho

Chennai, India

www.zoho.com

Zoho Corporation began life in 1996 as a software company called Adventnet, Inc., which focused on building network management products. The company was renamed in 2009 and now operates three distinct divisions including Zoho, which develops and sells a suite of business applications. Zoho Corporation has never accepted venture capital investment, remains privately held and is led by co-founder and CEO Sridhar Vembu.

Headquartered in Chennai, India, Zoho currently has two other offices in India as well as sites in the United States (two offices), China, Mexico, Australia, Netherlands, United Arab Emirates, Japan and Singapore. The company employs around 9,000 people.

Across its suite of over 45 business applications – which includes solutions for CRM, project management, book keeping, human resource management, analytics, marketing and support – Zoho claims to have 60 million users worldwide.

Zoho Analytics is the BI component of the Zoho business suite, and was first released in 2009. With Zoho Analytics, the vendor aims to provide unified business analytics to its customers. Zoho Analytics supplies a number of different connectors to data sources which can be integrated in a central data model designed for use by business users. Business connectors (for Zoho & non-Zoho apps) are able to auto-identify and auto-map table relationships, create domain and cross-domain models, train the NLQ engine and create sample reports and dashboards to speed up implementations for analytics.

Zoho Analytics can be used as a self-service BI platform hosted on Zoho cloud and be embedded in third-party applications. It can also be deployed on-premises and on third-party cloud infrastructures such as Google Cloud, AWS and Microsoft Azure. Zoho's recently released Data Prep solution provides business analysts with an appealing and intuitive user interface for data ingestion and wrangling combined with guidance for possible preparation steps.

Strengths

- Business-user oriented BI & analytics solution with functionality for ad hoc analysis, dashboards and data preparation.

- Pre-packaged applications for different data sources with predefined content.

- Open and relatively low pricing.

- Conversational analytics with 'Ask Zia'.

- Data storytelling through slideshows embedded in 'Zoho Show'.

Challenges

- Visual data exploration capabilities are limited to interactive dashboard applications.

- Limited advanced analysis capabilities.

- Formatting and layout of reports not as feature-rich as some rival products.

Other vendors

There are many other established vendors in the business intelligence and analytics market that provide mature and very useful technology, which may be ideal for organizations looking for a BI solution. However, due to the inclusion criteria applied in this report, those vendors are not evaluated in detail. To provide a broader market overview, we have listed some of them here.

ADVIZOR Solutions, a Pursuant Group Company

Downers Grove, IL, USA

www.advizorsolutions.com

ADVIZOR offers interactive analysis with lots of different chart types for visual discovery as well as predictive analytics based on a patented in-memory data model. In addition to supporting fundraising, education and healthcare, Advizor Solutions serves the IT, cybersecurity and manufacturing industries.

Altair

Troy, MI, USA

www.altair.com

SmartSight is a business intelligence solution focused on data discovery and data visualization. The acquired Datawatch portfolio extends functionality for streaming analytics (Panopticon) and data preparation (Monarch). Altair SmartSight is part of the Altair SmartWorks™ suite, which is an open-architecture solution enabling advanced edge-to-cloud IoT applications and augmented data analytics powered by machine learning to drive innovation.

Alteryx

Irvine, CA, USA

www.alteryx.com

Alteryx Platform provides analysts with a workflow-based approach to data integration, modeling and advanced analytics that leads to deeper insights into data.

Amazon Web Services

Seattle, WA, USA

www.aws.amazon.com

Cloud infrastructure and services provider with a number of different products for data storage, processing, analytics and visualization.

Arcadia Data, part of Cloudera

San Mateo, CA, USA

www.arcadiadata.com

Cloud-based BI & analytics software strongly focused on the support of cloud and Hadoop-based data lakes. Arcadia Data was recently acquired by Cloudera.

Bilander

Gdynia, Poland

www.bilandergroup.com

Integrated BI tool for ad hoc reporting, advanced analysis, planning, dashboarding and balanced score-carding with comprehensive chart functionality.

Bissantz

Nuremberg, Germany

www.bissantz.de

Bissantz's DeltaMaster software enables users to create custom solutions for analysis, planning and reporting, featuring patented visualization capabilities.

Chartio

San Francisco, CA, USA

www.chartio.com

Interactive charts and dashboards created via an intuitive drag-and-drop interface. Customers can connect their databases directly to Chartio to visualize data in real time.

Cubeware

Kalbenmoor, Germany

www.cubeware.de

BI offering consisting of a front end for reporting, analysis, dashboarding and planning with a data integration tool to create various multidimensional models.

Comma Soft

Bonn, Germany

www.comma-soft.com

In-memory based BI solution targeted at business users. Includes advanced analytics and data science functionality as well as capabilities for dashboading, ad hoc analysis, reporting, set-oriented analysis and visual navigation in data.

Connexica

Stafford, UK

www.connexica.com

Connexica's CXAIR is a search-based analytics tool for querying structured and unstructured data. Pre-defined solutions for finance, health and retail are available.

Cyberscience

Centennial, CO, USA

www.cyberscience.com

An ad hoc query and production reporting system that allows users to create simple queries, business graphics and crosstab reports as well as production reports.

Datameer

San Francisco, CA, USA

www.datameer.com

Code-free ETL or ELT data pipeline creation software. Data prep for Hadoop available as well. Moreover, Datameer offers built-in analytics and visualization functionality.

Entrinsik

Raleigh, NC, USA

www.entrinsik.com

Entrinsik Informer includes a browser-based drag-and-drop, point-and-click interface designed to encourage self-service BI. It is heavily used by mid-sized organizations in specific industries.

GoodData

San Francisco, CA, USA

www.gooddata.com

GoodData offers a cloud analytics platform to help organizations creating and distributing data products. The product offers analytics functionality such as embedding and data preparation as well as data visualization.

iDashboards

Troy, MI, USA

www.idashboards.com

Interactive dashboarding software that displays data from databases, data warehouses, spreadsheets, XML and other data sources in real time.

InetSoft

Piscataway, NJ, USA

www.inetsoft.com

InetSoft offers various applications that focus on data visualization, pixel-perfect and embeddable reporting, and data intelligence (combination of data visualization with machine learning-based data mashup).

insightsoftware

Raleigh, NC, USA

www.insightsoftware.com

insightsoftware is a US-based global provider of solutions for the office of the CFO. The vendor's rapid growth in recent years has been largely inorganic and driven by the acquisition of vendors such as Excel4apps, CXO Software, BizNet Software, Jet Global, Bizview Systems, Longview Solutions, Mekko Graphics, Event 1 Software, Viareport, IDL Group, Certent and Logi Analytics.

Knowage

Rome, Italy

www.knowage-suite.com

An open source business intelligence suite for ad hoc reporting, interactive cockpits, multidimensional (OLAP) analysis and data mining.

Palantir Technologies

Palo Alto, CA, USA

www.palantir.com

Palantir offers solutions for integrating, visualizing and analyzing massive amounts of information. Its software is deployed at public institutions and private enterprises, and also in the nonprofit sector, for example, in defense, anti-fraud and disease response.

Panorama Software

Toronto, ON, Canada

www.panorama.com

Data analytics platform focused on communications and media service providers. Necto integrates AI and machine learning technologies to provide self-service analytics with out-of-the-box reports, dashboards, predictive and prescriptive insights.

Phocas

Coventry, UK

www.phocassoftware.com

Phocas offers a mature self-service tool that enables users to perform their own analysis and reporting with IT support needed only for data provisioning. It has a good range of functionality to support ad hoc querying, reporting and dashboarding.

Salient

Vancouver, BC, Canada

www.salientbi.com

Salient Software Suite offers analytics and data visualizations based on a proprietary technology designed to deliver speed and scale to customers. The vendor offers solutions for different industries and focus areas.

ThoughtSpot

Palo Alto, CA, USA

www.thoughtspot.com

A search-based BI solution for visual exploration and data discovery with integrated machine learning algorithms.

Workday (Adaptive Insights)

Pleasanton, CA, USA

www.adaptiveplanning.com

Workday Adaptive Planning is a cloud-based, business-user-oriented CPM solution with integrated functionality for planning, reporting, dashboarding, analysis and financial consolidation.

Related research documents

The following BARC documents complement this BARC Score report:

BARC Access

http://barc-research.com/research/business-intelligence/

Access to BARC's complete research portfolio, including product reviews with detailed insights into more than 40 BI & analytics solutions, covering all the major players in the market.

BARC Scores

http://barc-research.com/barc-score/

BARC Score Analytics for Business Users: The lowdown on the global market for governed self-service analytics platforms. We evaluate business user support for the entire analytical cycle: from data and its preparation to presentation and collaborative content editing.

BARC Score Integrated Planning & Analytics: A clear overview of the market for integrated planning and analytics software based on a combination of detailed end-user feedback and thorough analysis of products and vendors.

BARC Software Surveys

https://bi-survey.com/

The BI & Analytics Survey: BARC's major annual report on the global BI & analytics software market. It is based on the world's largest survey of BI users, with a sample of 2,500 survey responses – that is why so many companies trust the results of The BI & Analytics Survey and base their software purchasing decisions upon it.

The Planning Survey: The Planning Survey offers an in-depth comparison of up-to-date planning solutions to decision-makers looking for new planning software. Based on feedback from more than 1,400 users, the latest edition evaluates over twenty leading planning products.

The Data Management Survey: The voice of the data management community: The Data Management Survey is BARC's annual report on the data management software market. This BARC survey examines data management products in terms of their functionality, application areas and usability.

Other BARC Research

Free to download at: http://barc-research.com/research/bi-trend-monitor/

BARC Data, BI & Analytics Trend Monitor: BARC's Data, BI & Analytics Trend Monitor study gives practitioners a platform to have their say on the trends currently shaping the BI, analytics and data management market, supplemented by additional commentary and analysis from BARC analysts.

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